LOW-PRESSURE ACCEL® II VALVES  
CONSTANT VOLUME, 2-POSITION, BASE UPGRADABLE

Constant volume, 2-position, and base upgradeable Low-Pressure Accel® II Valves provide essential airflow control solutions.

**Constant volume** (CV) valves are typically used for snorkels, biosafety cabinets, CV fume hoods, ventilated cabinets, and outside air regulation. Control Type C in the Ordering Guide.

**Two-position** pneumatic valves are typically used for canopy hoods and two-position fume hoods. Control Type P in the Ordering Guide.

**Base upgradeable** valves can be substituted when flow feedback is required or upgradability to VAV is desired. Control Type B in the Ordering Guide.

---

**FEATURES**

<table>
<thead>
<tr>
<th>Feature/Option</th>
<th>Constant Volume (CEV/CSV)</th>
<th>2-Position (PEV/PSV)</th>
<th>Base Upgradeable (BEV/BSV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Type</td>
<td>C (Constant Volume)</td>
<td>Pneumatic</td>
<td>B (Base Upgradeable)</td>
</tr>
<tr>
<td>Actuator Type</td>
<td>—</td>
<td>Pneumatic</td>
<td>—</td>
</tr>
<tr>
<td>Flow Feedback Signal</td>
<td>—</td>
<td>Pneumatic or CV</td>
<td>—</td>
</tr>
<tr>
<td>Fail-Safe</td>
<td>Fixed</td>
<td>NO/NC</td>
<td>NO/NC**</td>
</tr>
<tr>
<td>Factory Insulated Supply Valve Body</td>
<td>Option</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Field-Adjustable Flow</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Flow Alarm via Feedback Circuit</td>
<td>Option</td>
<td>Option</td>
<td>Option</td>
</tr>
<tr>
<td>Flow Alarm via Pressure Switch</td>
<td>Option</td>
<td>Option</td>
<td>Option</td>
</tr>
<tr>
<td>Low Noise Diffuser Construction</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

All valves include pressure-independent controller.

+ Accel II valves are designed to reduce sound over all frequencies, but significantly target the lower bands (125-500 Hz) to help eliminate the need for silencers.

* Not available with the 14-inch valve at this time.

** ISO**

Phoenix Controls Designs, Develops, Manufactures, and sells products, systems, and service to control the environment and airflow of critical spaces. Phoenix Controls is registered to ISO 9001:2008.

**Warranty**

Phoenix Controls Warrants all venturi valves against defects in material and workmanship for a period of 5 years. In addition, all other equipment manufactured by Phoenix Controls, such as sash sensors, fume hood monitors, and equipment supplied but not manufactured by Phoenix Controls is covered by a 3 year warranty.

---

**OSHPD Certified**

This device is certified for OSHPD Seismic Certification Preapproval per 2013 CBC, 2012 IBC, ASCE 7-10, and IEC-ES-AC-156. OSHPD Special Certification number OSP-0290-10.

*Vertical applications approval pending.

**NVLAP Accreditation**

All venturi valves are characterized on NVLAP Accredited Airstations, Lab Code 200992-0. NVLAP is administered by the National Institute of Standards and Technology (NIST).
SPECIFICATIONS

Construction
- 16 ga. spun aluminum valve body with continuous welded seam
- Valve bodies available as uncoated aluminum; or with corrosion-resistant baked-on phenolic coating, or PVDF (Polyvinylidene fluoride) coating
- Composite Teflon® shaft bearings
- Spring grade stainless steel spring and polyester or PPS slider assembly
- Supply valves insulated with 3/8" (9.5 mm) flexible closed-cell polymer-based foam:
  - flame/smoke rating 25/50; density is 1.5 lb/ft³ (24.0 kg/m³)

Operating Range
- 32-122 °F (0-50 °C) ambient
- 10-90% non-condensing RH

Sound
Designed for low sound power levels to meet or exceed ASHRAE noise guidelines.

Performance
- Pressure independent over a 0.3"-3.0" WC (75-750 Pa) across valve
- Pressure independent airflow accuracy to ± 5% of airflow feedback signal
- No additional straight duct runs needed before or after valve
- Available in flows from 35-5600 CFM (9514 m³/hr)
- Response time to change in duct static pressure: <1 second

Pneumatic Actuation
- Only applicable to PEV, PSV and BEV/BSV
- 20 psi (-0/+2 psi) with a 20 micron filter main air required
- Compressor sizing: Accel II Valves are not continuous air-consuming devices. For compressor sizing, use:
  - single and dual valves: 10 scim
  - triple and quad valves: 20 scim

Electric Actuation
Control Types I and Z only
- Single I:
  - 24 Vac ± 20% or 24 Vdc ± 10%, 50/60 Hz @ 4 VA
- Dual I:
  - 24 Vac ± 20% or 24 Vdc ± 10%, 50/60 Hz @ 5.5 VA
- Single and Dual Z:
  - 24 Vac ± 20% or 24 Vdc ± 10%, 50/60 Hz @ 5 VA

Flow Feedback Card
Mounting
- The flow feedback card is factory installed in a ABS flame retardant black box enclosure.
- Dimensions: 6 x 3.2 x 1.9 inches
- Color: Black

Power
- ±15 Vdc, ± 15%, 35 mA
- Or
  - 24 Vac, ± 15%, 50/60 Hz, 1.5 VA

Regulatory Compliance
- RoHS
- FCC
  - This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
    1. This device may not cause harmful interference.
    2. This device must accept any interference received, including interference that may cause undesired operation.
- EU Contact Address:
  - Honeywell GmbH
  - Boeblingen Str. 17
  - 71101 Schoenaich
  - Germany

See wiring diagrams

Teflon is a registered trademark of DuPont Company.
**ORDERING GUIDE**

**VALVE FAMILY**
Note: Supply valves come standard with insulation.
CSV = Constant volume supply valve
CEV = Constant volume exhaust valve
PSV = Pneumatic supply valve (non-feedback)
PEV = Pneumatic exhaust valve (no feedback)
BSV = Basic upgradable supply valve
BEV = Basic upgradable exhaust valve;

**VALVE CONSTRUCTION**
A = Body and cone uncoated aluminum; uncoated 316 stainless steel shaft
B = Body and cone with baked phenolic coating, PFA-coated 316 stainless steel shaft
C = Body and cone with baked-on phenolic coating, hardware with titanium or baked-on phenolic coating, PFA-coated 316 stainless steel shaft
D = Body and cone with a PVDF-coating, hardware with baked-on corrosion-resistant epoxy phenolic coating or PVDF-coating, and a PFA-coated 316 stainless steel shaft; only available for 8", 10", and 12"-inch Design A single-body valves no flanges

**NUMBER OF VALVE BODIES**
see Note 1
F = Single valve with a welded circular flange
1 = One valve body, no flange
2 = Two valve bodies (dual); for PV and BSV - only 10" and 12" valves
3 = Three valve bodies (triple); for PV and BSV - only 12" valves
4 = Four valve bodies (quad); for PV and BSV - only 12" valves

**VALVE SIZE**
08 = 8" valve (7.88/200mm actual diameter)
10 = 10" valve (9.67/246mm actual diameter)
12 = 12" valve (11.84/301mm actual diameter)
14 = 14" valve (13.88/352mm actual diameter); see Notes 1, 6

**FLOW/PRESSURE OPERATING RANGE**
L = Low pressure operation; pressure independent over a range of 0.3 to 3.0" WC (75 to 750 Pa), associated pressure switch trips at 0.2" WC See Standard Valve Flow/Pressure Operating Range table below

**VALVE DESIGN**
A = Conical shape diffuser (Accel II); this valve is not available as a shut-off valve

**STANDARD ANALOG VALVE FLOW/PRESSURE OPERATING RANGE**

<table>
<thead>
<tr>
<th>Designation</th>
<th>Size</th>
<th>Operating Range in CFM (m3/hr)</th>
<th>Pressure Drop Across Valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>L = Low Pressure</td>
<td>08&quot;*</td>
<td>35-500 (60-845)</td>
<td>0.3-3.0&quot; WC (75-750 Pa)</td>
</tr>
<tr>
<td>10&quot;</td>
<td>50-550 (85-930)</td>
<td>100-1100 (170-1860)</td>
<td></td>
</tr>
<tr>
<td>12&quot;</td>
<td>90-1050 (155-1780)</td>
<td>180-2100 (310-3560)</td>
<td>270-3150 (465-5340)</td>
</tr>
<tr>
<td>14&quot;</td>
<td>200-1400 (340-2375)</td>
<td>400-2800 (680-4750)</td>
<td>600-4200 (1020-7125)</td>
</tr>
</tbody>
</table>

**NOTES:**
1. BxV 14-inch Pneumatically actuated and Fixed, Field-Adjustable valves are only available in single-body units without flow feedback.
2. Option REI: Remote Electronics, Indoor installations only.
   * For low-speed electric actuators (Control Type = 1 or 2): the distance to the valve controller is limited to 150 feet (45.7 meters) of 22 gauge cable.
   * For pneumatic actuators (Control Type = B): the distance of the valve controller is limited to 75 feet (22.8 meters) of pneumatic tubing.
3. Option REO: Remote Electronics, Outdoor installations only. Limited to Pneumatically actuated valves only (Control Type = B). Horizontal orientation only. Includes sealed Vpop, small weather-resistant TP34 box mounted on base channel for others to connect Vpop cables, and a valve controller in an enclosure that pneumatically supplies valve from the base channel and shipped in the same box as the valve.
   * Maximum distance between remote mounted enclosure and valve is 75 feet (22.8 meters) (maximum allowable length of pneumatic tubing).
4. Option RPE: Remote Electronics, Outdoor installations only. Limited to Pneumatically actuated valves only (Control Type = B). Horizontal orientation only. Includes sealed Vpop, small weather-resistant TP34 box mounted on base channel for others to connect Vpop cables, and a valve controller in an enclosure that pneumatically supplies valve from the base channel and shipped in the same box as the valve.
   * Maximum distance between remote mounted enclosure and valve is 75 feet (22.8 meters) (maximum allowable length of pneumatic tubing).
5. Option REO with BxV valves is only available with Pneumatic actuation (Control Type = B) and must have flow feedback (Controller Designation = F or S).
6. 14" Dual, Triple, Quad available for CvX only.